This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward the food product outlet, and at least one orifice bank comprised of a plurality of pairs of orifices each for introducing a liquid ~~fluid~~ into a tank disposed inside the housing in which the food product-receiving chamber is received with the orifices spaced apart in a lengthwise direction relative to the tank substantially the length of the tank;

b) introducing food product into the food product-receiving chamber into a liquid heat transfer medium within the tank ~~housing of the blancher~~ through the inlet;

c) turbulently discharging a liquid ~~fluid~~ through each ~~at least~~ one of the plurality of pairs of orifices into the liquid heat transfer medium in the tank;

d) heating the food product in the food product-receiving chamber using the liquid heat transfer medium in the tank with the liquid heat transfer medium having a temperature of at least 120° Fahrenheit;

e) urging the food product in the food product-receiving chamber toward the outlet; [[and]]

f) removing the food product from the food product-receiving chamber through the outlet; [[and]]

wherein in step c) the ~~fluid is a~~ liquid that is discharged through ~~at least one of~~ the orifices at a flow rate of at least 20 gallons per minute per foot of tank length ~~gpm and a pressure of at least 30 psi~~; and

wherein the orifices in the orifice bank are oriented to direct the discharged liquid into liquid heat transfer medium in an exiting quadrant of the tank generally toward an axis of rotation of the rotary food product transport mechanism.

2. **(Canceled)**

3. **(Currently amended)** The method of claim 1 wherein ~~there is provided at least one bank of orifices comprised of a plurality of orifices, the blancher has a length, and~~ in step c) the liquid is discharged from the at least one of the orifice banks ~~bank of orifices~~ at a flow rate of at least 20 gallons per minute per orifice or 60 gallons per minute [[gpm]] per foot ~~of length of the blancher~~.

4. **(Currently amended)** The method of claim 3 ~~wherein the heat transfer medium comprises a liquid and~~ further comprising the additional step of withdrawing liquid heat transfer medium from the tank ~~blancher~~ and discharging the withdrawn liquid heat transfer medium from the orifices in step c).

5. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward the food product outlet, and a plurality of spaced apart banks of orifices each comprised of a plurality of pairs of orifices each for introducing a fluid into a tank ~~the housing~~ holding a liquid heat transfer medium;

b) introducing food product into [[a]] the liquid heat transfer medium within the tank ~~housing of the blancher~~ through the inlet;

c) discharging a fluid through each ~~at least~~ one of the plurality of pairs of orifices of each one of the plurality of orifice banks into the liquid heat transfer medium within the tank;

d) heating the food product in the food product-receiving chamber via heat transfer from liquid heat transfer medium having a temperature of at least 120° Fahrenheit;

e) urging the food product in the food product-receiving chamber toward the outlet by rotating the food product transport mechanism; and

f) removing the food product from the food product-receiving chamber through the outlet; [[and]]

wherein in step c) the fluid ~~is a liquid~~ discharged from ~~through at least one of~~ the orifices of at least one of the plurality of orifice banks comprises a liquid at a flow rate of at least 20

gallons per minute per foot of manifold length [[gpm]] and at a pressure of at least about 30 pounds per square inch ~~80 psi~~; and

wherein each one of the plurality of orifice banks is spaced apart and located so each one of the orifices of each one of the plurality of orifice banks directs fluid flow into liquid heat transfer medium located in an exiting quadrant of the tank.

6. **(Currently amended)** The method of claim 5 wherein ~~there is provided at least one bank of orifices comprised of a plurality of orifices, the blancher has a length, and~~ in step c) the liquid is discharged from the bank of orifices at a pressure of at least 80 pounds per square inch or a flow rate of at least 60 gallons per minute [[gpm]] per foot ~~of length of the blancher~~.

7. **(Currently amended)** The method of claim 6 ~~wherein the heat transfer medium comprises a liquid and~~ further comprising the additional step of withdrawing liquid heat transfer medium from the blancher and discharging the withdrawn liquid heat transfer medium in step c) from the orifices of the at least one of the orifice banks.

8. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward the food product outlet, and a plurality of pairs of orifices each for introducing a fluid into the housing;

b) introducing food product into a liquid heat transfer medium within the housing of the blancher through the inlet;

c) discharging a fluid through at least one of the plurality of pairs of orifices into the heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet; and

wherein in step c) the fluid comprises a gas discharged through ~~at least~~ each one of the orifices into the liquid heat transfer medium within the housing in an exiting quadrant of the blancher toward the perforate food product-receiving chamber at a flow rate of at least 60 cubic feet per minute [[CFM]] and at a pressure of at least 2 pounds per square inch [[psi]].

9. **(Original)** The method of claim 8 wherein there is a gaseous atmosphere in the blancher and further comprising the additional step of withdrawing a portion of the gaseous atmosphere from the blancher and discharging the withdrawn portion of the gaseous atmosphere in step c).

10. **(Original)** The method of claim 9 wherein the heat transfer medium comprises water and the gaseous atmosphere in the blancher includes water vapor.

11. **(Original)** The method of claim 8 wherein there is provided at least one bank of orifices comprised of a plurality of orifices, the blancher has a length, and in step c) the gas is discharged from the bank of orifices at a flow rate of at least 100 CFM per foot of length of the blancher.

12. **(Original)** The method of claim 8 wherein there is provided at least one bank of orifices comprised of a plurality of orifices, the blancher has a length, and in step c) the gas is discharged from the bank of orifices at a flow rate of at least 200 CFM per foot of length of the blancher.

13. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward the food product outlet, [[and]] a first bank comprised of a plurality of pairs of orifices each for introducing a fluid into ~~the housing~~ a liquid heat transfer medium holding tank, and a second bank comprised of a plurality of pairs of orifices each for introducing a fluid into the liquid heat transfer medium holding tank;

b) introducing food product into [[a]] liquid heat transfer medium within the tank ~~housing of the blancher~~ through the inlet;

c) discharging a fluid through at least one of the plurality of pairs of orifices of each orifice bank into the liquid heat transfer medium within the tank;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet; and

wherein in step c) the fluid comprises a gas discharged through each ~~at least~~ one of the orifices of one of the orifice banks into liquid heat transfer medium in an exiting quadrant of the blancher ~~at a flow rate of at least 10 CFM and a pressure of at least 60 psi~~; and

wherein in step c) the fluid comprises a liquid discharged through each one of the orifices of the other one of the orifice banks into liquid heat transfer medium in the exiting quadrant of the blancher.

14. **(Currently amended)** The method of claim 13 wherein there is a gaseous atmosphere in the blancher and further comprising the additional step of withdrawing a portion of the gaseous atmosphere from the blancher and discharging the withdrawn portion of the gaseous atmosphere in step c) through the orifices of the one of the orifice banks.

15. **(Currently amended)** The method of claim 14 wherein the liquid heat transfer medium comprises water and the gaseous atmosphere in the blancher includes water vapor.

16. **(Currently amended)** The method of claim 13 wherein there is provided at least one bank of orifices comprised of a plurality of orifices, the blancher has a length, [[and]] in step c) the gas is discharged from the ~~bank of~~ orifices of the one of the orifice banks at a flow rate of at least 10 CFM per foot of length ~~of the blancher~~, and in step c) the liquid is discharged from the orifices of the other one of the orifice banks at a flow rate of at least 20 gpm per foot of length.

17. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward

the food product outlet, [[and]] a first bank of a plurality of pairs of orifices each for introducing a fluid into the housing, and a second bank of a plurality of pairs of orifices each for introducing a fluid into the housing;

b) introducing food product into a liquid heat transfer medium within the housing of the blancher through the inlet wherein the liquid heat transfer medium has a temperature high enough to blanch the food product;

c) discharging a fluid through ~~at least~~ each one of the plurality of pairs of orifices of each one of the orifice banks into the liquid heat transfer medium;

d) heating the food product in the food product-receiving chamber via heat transfer from the liquid heat transfer medium;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet; and

wherein the food products have a density of at least 55 lb/ft^3 and in step c) ~~there is at least one orifice through which~~ water is discharged from the orifices of one of the orifice banks into liquid heat transfer medium in an exiting quadrant of the blancher at a flow rate of at least 20 gpm per foot of manifold length ~~and a pressure of at least 30 psi~~ and ~~there is at least one orifice through which~~ air is discharged from the orifices of the other one of the orifice banks into liquid heat transfer medium in the exiting quadrant of the blancher at a flow rate of at least 60 SCFM ~~and a pressure of at least 2 psi~~.

18. **(Original)** The method of claim 17 wherein there is at least eight inches of depth of food product in the food product-receiving chamber.

19. **(Original)** The method of claim 17 wherein at least eight thousand pounds of food product per hour is removed in step f).

20. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward

the food product outlet, [[and]] a first elongate longitudinally extending manifold comprised of a plurality of pairs of orifices each for introducing a fluid into the housing, and a second longitudinally extending manifold comprised of a plurality of pairs of orifices each for introducing a fluid into the housing;

b) introducing food product into a water heat transfer medium within the housing of the blancher through the inlet;

c) discharging a fluid through each ~~at least~~ one of the plurality of pairs of orifices of each one of the first and second manifolds into the water heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet;[[and]]

wherein the food products have a density of at least 55 lb/ft^3 and in step c) ~~there is at least one orifice through which~~ water is discharged at a flow rate of at least 20 gpm per foot of manifold length from the orifices of each one of the manifolds into water heat transfer medium in an exiting quadrant of the blancher and into water heat transfer medium in the perforate food product-receiving chamber so it impinges against food product in the perforate food product-receiving chamber~~and a pressure of at least 30 psi and there is at least one orifice through which air is discharged at a flow rate of at least 10 SCFM and a pressure of at least 80 psi~~; and

wherein the water discharged from the plurality of pairs orifices of each one of the first and second manifolds is recirculated water heat transfer medium withdrawn from within the blancher housing.

21. **(Original)** The method of claim 20 wherein there is at least eight inches of depth of food product in the food product-receiving chamber.

22. **(Original)** The method of claim 20 wherein at least eight thousand pounds of food product per hour is removed in step f).

23. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward the food product outlet, [[and]] first manifold comprised of a plurality of pairs of orifices each for introducing a fluid into the housing, and a second manifold comprised of a plurality of pairs of orifices each for introducing a fluid into the housing;

b) introducing food product into a liquid heat transfer medium within the housing of the blancher through the inlet;

c) discharging a fluid through each ~~at least~~ one of the plurality of pairs of orifices of the first and second manifolds into the liquid heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet; and

wherein the blancher has a length, the food products being heated in the blancher have a density of at least 55 lb/ft^3, and in step c) ~~there is at least one orifice through which~~ water is discharged from each one of the plurality of pairs of orifices of each one of the first and second manifolds at a flow rate of at least 20 gpm per foot of manifold into liquid heat transfer medium in the blancher housing located in an exiting quadrant of the blancher toward and into the perforate food product-receiving chamber ~~at a flow rate of at least 80 gpm per foot of blancher length and a pressure of at least 30 psi and there is at least one orifice through which~~ air is discharged at a flow rate of at least 10 SCFM per foot of blancher length and a pressure of at least 80 psi].

24. **(Currently amended)** The method of claim 23 wherein each one of the first and second manifolds are spaced apart from one another, wherein each one of the first and second manifolds extend in a longitudinal direction relative to the blancher housing, and each one of the first and second manifolds are disposed outside the blancher housing, and wherein there is at least eight inches of depth of food product in the food product-receiving chamber.

25. **(Original)** The method of claim 23 wherein at least eight thousand pounds of food product per hour is removed in step f).

26. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward the food product outlet, and at least one manifold comprised of a plurality of pairs of orifices each for introducing a fluid into the housing;

b) introducing food product into a liquid heat transfer medium within the housing of the blancher through the inlet having a temperature high enough to blanch the food product during its residency time in the liquid heat transfer medium in the blancher housing;

c) withdrawing liquid heat transfer medium from within the housing of the blancher;

[[c)]] d) discharging [[a]] the withdrawn liquid heat transfer medium [[fluid]] through each ~~at least~~ one of the plurality of pairs of orifices of the manifold into the liquid heat transfer medium disposed in an exiting quadrant of the blancher at a flow rate of at least 20 gpm per foot of blancher length substantially along the entire length of the blancher housing;

[[d)]] e) heating the food product in the food product-receiving chamber;

[[e)]] f) urging the food product in the food product-receiving chamber toward the outlet by rotating the rotary food product transport mechanism; and

[[f)]] g) removing the food product from the perforate food product-receiving chamber through the outlet~~; and~~

~~wherein the blancher has a length, the food products have a density of at least 55 lb/ft^3, and in step c) there is at least one orifice through which water is discharged at a flow rate of at least 80 gpm per foot of blancher length and a pressure of at least 30 psi and there is at least one orifice through which air is discharged at a flow rate of at least 60 SCFM per foot of blancher length and a pressure of at least 2 psi~~.

27. **(Currently amended)** The method of claim 26 wherein there are a plurality of manifolds each having a plurality of pairs of liquid heat transfer medium discharging orifices that discharge recirculated liquid heat transfer medium in step d) and wherein there is at least eight inches of

depth of food product in the perforate food product-receiving chamber.

28. **(Original)** The method of claim 26 wherein at least eight thousand pounds of food product per hour is removed in step f).

29. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward the food product outlet, and at least one longitudinally extending manifold disposed outside the blancher housing that is comprised of a plurality of pairs of orifices each for introducing a fluid into the housing;

b) introducing food product into a liquid heat transfer medium within the housing of the blancher through the inlet with the liquid heated to a temperature high enough to at least pasteurize the food product;

c) discharging ~~a fluid~~ liquid heat transfer medium withdrawn from within the blancher housing through each ~~at least~~ one of the plurality of pairs of orifices of the at least one manifold back into the liquid heat transfer medium within the blancher housing;

d) heating the food product in the food product-receiving chamber using the liquid heat transfer medium;

e) urging the food product in the food product-receiving chamber toward the outlet by rotating the rotary food product transport mechanism; and

f) removing the food product from the food product-receiving chamber through the outlet; and

wherein the blancher has a length, the food products have a density of at least 55 lb/ft^3, and in step c) ~~there is at least one orifice through which water~~ liquid heat transfer medium is discharged from each one of the plurality of pairs of orifices of the at least one manifold substantially along the entire length of the blancher housing at a flow rate of at least 20 gpm per foot of blancher length and at a pressure of at least about 30 [[80]] psi into an exiting quadrant of the blancher ~~and there is at least one orifice through which air is discharged at a flow rate of at~~

~~least 10 SCFM per foot of blancher length and a pressure of at least 80 psi~~.

30. **(Original)** The method of claim 29 wherein there is at least eight inches of depth of food product in the food product-receiving chamber.

31. **(Original)** The method of claim 29 wherein at least eight thousand pounds of food product per hour is removed in step f).

32. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward the food product outlet, and a plurality of pairs of orifices each for introducing a fluid into the housing;

b) introducing food product into a liquid heat transfer medium within the housing of the blancher through the inlet;

c) discharging a fluid through each ~~at least~~ one of the plurality of pairs of orifices into the heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet; and

wherein the blancher has a length, the food products have a density of at least 55 lb/ft^3, and in step c) there is at least one orifice through which water is discharged at a flow rate of at least [[80]] 20 gpm per foot of blancher length and a pressure of at least 30 psi into liquid heat transfer medium in an exiting quadrant of the blancher and there is at least one orifice through which air is discharged at a flow rate of at least 10 SCFM per foot of blancher length and a pressure of at least 80 psi into liquid heat transfer medium in the exiting quadrant of the blancher.

33. **(Original)** The method of claim 32 wherein there is at least eight inches of depth of food

product in the food product-receiving chamber.

34. **(Original)** The method of claim 32 wherein at least eight thousand pounds of food product per hour is removed in step f).

35. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward the food product outlet, and a plurality of pairs of orifices arranged in a lengthwise direction substantially the length of the blancher housing with each orifice for introducing a fluid into the housing;

b) introducing food product into a liquid heat transfer medium within the housing of the blancher through the inlet;

c) discharging a fluid through each ~~at least~~ one of the plurality of pairs of orifices into the liquid heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet; and

wherein the blancher has a length, the food products have a density of no greater than 55 lb/ft^3, and in step c) ~~there is at least one orifice through which~~ air is discharged from each one of the plurality of pairs of orifices into the liquid heat transfer medium in an exiting quadrant of the blancher at a flow rate of at least 60 SCFM per foot of blancher length and a pressure of at least 2 psi.

36. **(Original)** The method of claim 35 wherein there is at least eight inches of depth of food product in the food product-receiving chamber.

37. **(Original)** The method of claim 35 wherein at least four thousand five hundred pounds of food product per hour is removed in step f).

38. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward the food product outlet, and a plurality of pairs of orifices arranged in a lengthwise direction substantially the length of the blancher housing with each orifice for introducing a fluid into the housing;

b) introducing food product into a liquid heat transfer medium within the housing of the blancher through the inlet;

c) discharging a fluid through each ~~at least~~ one of the plurality of pairs of orifices into the heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet; and

wherein the blancher has a length, the food products have a density of no greater than 55 lb/ft^3, and in step c) ~~there is at least one orifice through which~~ air is discharged from each one of the plurality of pairs of orifices into the liquid heat transfer medium in an exiting quadrant of the blancher at a flow rate of at least 10 SCFM per foot of blancher length and a pressure of at least 80 psi.

39. **(Original)** The method of claim 38 wherein there is at least eight inches of depth of food product in the food product-receiving chamber.

40. **(Original)** The method of claim 38 wherein at least four thousand five hundred pounds of food product per hour is removed in step f).

41. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport

mechanism disposed in the food product receiving chamber for urging the food product toward the food product outlet, a first manifold having a plurality of pairs of orifices each for introducing a fluid into the housing, and a second manifold having a plurality of pairs of orifices each for introducing a fluid into the housing;

b) introducing food product into a liquid heat transfer medium within the housing of the blancher through the inlet;

c) discharging a fluid through each one of the plurality of pairs of orifices into the heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet; and

wherein each manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with [[its]] the manifold orifices directing flow of liquid heat transfer medium toward the food product receiving chamber and 2) located outwardly of a lengthwise-extending centerline of the blancher with each one of the manifold orifices directing fluid flow into [[in]] an exiting quadrant thereof defined from where the rotating food product transport mechanism emerges from the heat transfer medium to adjacent the centerline but not passing to or beyond the centerline.

42. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging the food product toward the food product outlet, and a manifold having a plurality of pairs of orifices distributed along substantially the length of the blancher housing each for introducing a fluid into the housing;

b) introducing food product into a liquid heat transfer medium within the housing of the blancher through the inlet;

c) discharging a fluid through each one of the plurality of pairs of orifices into the heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet;

wherein in step c) the fluid is a liquid that is discharged through ~~each one of~~ the orifices at a flow rate of at least 20 gallons per minute per foot of manifold; and

wherein the manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with [[its]] the manifold orifices directing flow of liquid heat transfer medium toward the food product receiving chamber and 2) located outwardly of a lengthwise-extending centerline of the blancher with each one of the manifold orifices directing fluid flow into [[in]] an exiting quadrant thereof defined from where the rotating food product transport mechanism emerges from the heat transfer medium to adjacent the centerline but not passing to or beyond the centerline.

43. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving and generally cylindrical drum ~~chamber~~ disposed in a housing that has a food product inlet, [[and]] a food product outlet, and comprises a liquid heat transfer medium holding tank, a rotary auger having a plurality auger flights ~~food product transport mechanism~~ disposed in the drum ~~food product receiving chamber~~ for urging the food product toward the food product outlet, a first manifold having a plurality of pairs of orifices each for introducing a fluid into the tank and drum ~~housing~~, and a second manifold having a plurality of pairs of orifices each for introducing a fluid into the tank and drum ~~housing~~;

b) introducing food product into [[a]] liquid heat transfer medium disposed in the drum ~~within the housing of the blancher~~ through the inlet with the liquid heat transfer medium having a temperature of at least 120° Fahrenheit;

c) discharging a fluid through each one of the plurality of pairs of orifices of each one of the manifolds into the liquid heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet by rotating the auger; and

f) removing the food product from the drum ~~food product receiving chamber~~ through the outlet;

wherein in step c) the fluid is a liquid that is discharged through each one of the orifices of at least one of the manifolds at a flow rate of at least 20 gallons per minute per foot of manifold; and

wherein each manifold is 1) oriented in a lengthwise direction relative to the perforate drum ~~food product receiving chamber~~ with [[its]] the orifices of the manifold directing flow of liquid heat transfer medium toward the perforate drum ~~food product receiving chamber~~ and 2) located outwardly of a lengthwise-extending generally vertical centerline of the blancher in an exiting quadrant thereof defined from where at least one of the auger flights of the rotary auger ~~rotating food product transport mechanism~~ emerges from the liquid heat transfer medium to adjacent the centerline but not passing to or beyond the centerline.

44. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the perforate food product receiving chamber for urging the food product toward the food product outlet, a first manifold having a plurality of pairs of orifices each for introducing a fluid into the housing, and a second manifold having a plurality of pairs of orifices each for introducing a fluid into the housing;

b) introducing food product into a heated liquid heat transfer medium within the housing of the blancher through the inlet;

c) discharging a fluid through each one of the plurality of pairs of orifices into the heat transfer medium;

d) heating the food product in the perforate food product-receiving chamber using the heat transfer medium;

e) urging the food product in the perforate food product-receiving chamber toward the outlet by rotating the food product transport mechanism; and

f) removing the food product from the perforate food product-receiving chamber through the outlet;

wherein each manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with each one of the plurality of the [[its]] orifices of each manifold each directing a separate flow of fluid ~~liquid heat transfer medium~~ toward and into the perforate food product receiving chamber, and 2) located outwardly of a lengthwise-extending generally vertical centerline of the blancher with each one of the manifold orifices directing fluid flow into [in] an exiting quadrant thereof defined from where the rotating food product transport mechanism emerges from the heat transfer medium to adjacent the centerline but not passing to or beyond the centerline; and

wherein a liquid is discharged from the orifices of one of the manifolds into heat transfer medium located in both the exiting quadrant and the perforate food product-receiving chamber and a [[gas]] gaseous or vaporous fluid is discharged from the orifices of the other one of the manifolds into heat transfer medium located in both the exiting quadrant and the perforate food product-receiving chamber.

45. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet and comprises a liquid heat transfer medium holding tank, a helical auger rotary food product transport mechanism disposed in the food product-receiving chamber for urging the food product toward the food product outlet, a first manifold having a plurality of pairs of orifices each for introducing a fluid into the liquid heat transfer medium in the tank ~~housing~~, and a second manifold having a plurality of pairs of orifices each for introducing a fluid into the liquid heat transfer medium in the tank ~~housing~~;

b) introducing food product into a liquid heat transfer medium within the tank ~~housing~~ of the blancher by introducing the food product through the inlet into the perforate food product-receiving chamber;

c) discharging a fluid through each one of the plurality of pairs of orifices into the heat transfer medium;

d) heating the food product in the food product-receiving chamber by heat transfer from the liquid heat transfer medium to the food product;

e) urging the food product in the food product-receiving chamber toward the outlet by rotating the helical auger rotary food product transport mechanism; and

f) removing the food product from the food product-receiving chamber through the outlet;

wherein in step c) the fluid is a liquid that is discharged through ~~each one of~~ the orifices of ~~one of~~ the first and second manifolds at a flow rate of at least 20 gallons per minute per foot of manifold length ~~at a pressure of at least 30 pounds per square inch~~; and

wherein each manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with its orifices directing flow of liquid heat transfer medium toward the perforate food product-receiving chamber and 2) located outwardly of a lengthwise-extending generally vertical centerline of the blancher with each one of the orifices directing fluid flow into [[in]] an exiting quadrant ~~thereof~~ of the tank defined from where the helical auger rotating food product transport mechanism emerges from the liquid heat transfer medium in the tank to adjacent the centerline but not passing to or beyond the centerline.

46. **(Currently amended)** The method of claim 45 wherein in step c) the fluid is a gas that is discharged through each one of the orifices of the other one of the manifolds at a flow rate of at least 10 standard cubic feet per minute into the exiting quadrant.

47. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a tank of a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging [[the]] food product received in the food product-receiving chamber toward the food product outlet, and a manifold having a plurality of pairs of orifices each for introducing a fluid into a liquid heat transfer medium in the tank ~~housing~~;

b) introducing food product into [[a]] the food product-receiving chamber through the inlet and into liquid heat transfer medium received in the tank extending into the food product-receiving chamber ~~within the housing of the blancher through the inlet~~;

c) discharging a fluid through each one of the plurality of pairs of orifices into the liquid heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet;

wherein in step c) the fluid is a liquid that is discharged through each one of the orifices at a flow rate of at least 20 gallons per minute per foot of manifold length;

wherein the manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with its orifices directing flow of liquid heat transfer medium toward the food product receiving chamber and 2) located outwardly of a lengthwise-extending generally vertical blancher bisecting centerline of the blancher such that each one of the manifold orifices direct fluid flow into [[in]] an exiting quadrant thereof defined from where the rotating food product transport mechanism emerges from the heat transfer medium to adjacent the centerline but not passing to or beyond the centerline; and

wherein at least four thousand five hundred pounds of food product per hour is removed in step f).

48. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a generally cylindrical perforate food product-receiving drum ~~chamber~~ disposed in a housing that comprises a tank and comprises [[has]] a food product inlet and a food product outlet, a rotary auger ~~food product transport mechanism~~ disposed in the food product receiving drum ~~chamber~~ for urging [[the]] food product received in the perforate food product-receiving drum toward the food product outlet, and a manifold ~~having~~ comprising a plurality of pairs of outwardly projecting orifices each for introducing a fluid into an aqueous heat transfer medium received in the tank ~~the housing~~;

b) introducing a plurality of pairs of pieces of food product into [[a]] an aqueous heat transfer medium received in the tank and disposed in the perforate food product-receiving drum ~~within the housing of the blancher through~~ via the inlet;

c) discharging a fluid through each one of the plurality of pairs of orifices of the manifold into the aqueous heat transfer medium;

d) heating the plurality of pairs of pieces of food product in the perforate food product-receiving drum ~~chamber~~ via heat transfer from the aqueous heat transfer medium having been heated to a temperature of at least 120° Fahrenheit;

e) urging the plurality of pairs of pieces of food product in the perforate food product-receiving drum ~~chamber~~ toward the outlet by rotation of the rotary auger; and

f) removing the plurality of pairs of pieces of food product from the perforate food product-receiving drum ~~chamber~~ through the outlet;

wherein in step c) the fluid ~~is a liquid~~ that is discharged through each one of the orifices comprises an aqueous liquid that is discharged at a flow rate ~~of at least 20 gallons per minute~~ and at a pressure;

wherein the manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with [[its]] the orifices of the manifold directing flow of fluid ~~liquid heat transfer medium~~ toward the perforate food product-receiving drum ~~chamber~~ and 2) located outwardly of a lengthwise-extending centerline of the blancher with each one of the orifices directing fluid flow into [[in]] an exiting quadrant thereof defined from where the rotating rotary auger ~~food product transport mechanism~~ emerges from the heat transfer medium to adjacent the centerline but not passing to or beyond the centerline; [[and]]

wherein there is at least eight inches of depth of pieces of food product in the perforate food product-receiving drum ~~chamber~~; and

wherein the manifold extends substantially the length of the tank.

49. (**Currently Amended**) A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a tank of a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging [[the]] food product received in the food product-receiving chamber toward the food product outlet, and a manifold having a plurality of pairs of orifices each for introducing a fluid into a liquid heat transfer medium in the tank ~~housing~~;

b) introducing food product into [[a]] the food product-receiving chamber through the inlet and into liquid heat transfer medium received in the tank extending into the food product-receiving chamber ~~within the housing of the blancher through the inlet~~;

c) discharging a fluid through each one of the plurality of pairs of orifices into the heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet;

wherein in step c) the fluid is a liquid that is discharged through each one of the orifices at a flow rate of at least 20 gallons per minute per foot of manifold length;

wherein the manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with its orifices directing flow of liquid heat transfer medium toward the food product receiving chamber and 2) located outwardly of a lengthwise-extending generally vertical blancher bisecting centerline of the blancher such that each one of the manifold orifices direct fluid flow into [[in]] an exiting quadrant thereof defined from where the rotating food product transport mechanism emerges from the heat transfer medium to adjacent the centerline but not passing to or beyond the centerline; and

wherein at least eight thousand pounds of food product per hour is removed in step f).

50. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a tank of a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging [[the]] food product inside the food product-receiving chamber toward the food product outlet, a first manifold having a plurality of pairs of orifices each for introducing a fluid into the tank and the food product receiving chamber ~~housing~~, and a second manifold having a plurality of pairs of orifices each for introducing a fluid into the tank and the food product receiving chamber ~~housing~~;

b) introducing food product into [a] the food product-receiving chamber through the inlet and into a liquid heat transfer medium received in the tank and extending into the food product-receiving chamber ~~within the housing of the blancher through the inlet~~;

c) discharging a fluid through each one of the plurality of pairs of orifices into the heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet;

wherein in step c) the fluid is a liquid that is discharged through each one of the orifices of at least one of the manifolds at a flow rate of at least 20 gallons per minute per foot of manifold length;

wherein each manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with its orifices directing flow of liquid heat transfer medium toward the food product receiving chamber and 2) located outwardly of a lengthwise-extending centerline of the blancher with each one of the orifices directing fluid flow into [[in]] an exiting quadrant thereof defined from where the rotating food product transport mechanism emerges from the heat transfer medium to adjacent the centerline but not passing [[to or]] beyond the centerline; and

wherein at least ~~four thousand five hundred~~ eight thousand pounds of food product having a density of at least 55 lb/ft^3 ~~per hour~~ is removed per hour in step f).

51. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a housing that has a food product inlet and a food product outlet and that is capable of holding heated water as a heat transfer medium, a rotary food product transport mechanism disposed in the food product-receiving chamber for urging [[the]] food product received in the food product-receiving chamber toward the food product outlet, a first manifold having a plurality of ~~pairs of~~ orifices each for introducing a fluid into heat transfer medium in the housing, and a second manifold having a plurality of ~~pairs of~~ orifices each for introducing a fluid into heat transfer medium in the housing, and a recirculation system comprising an intake through which fluid from within the blancher can be withdrawn and delivered to at least one of the first and second manifolds, and a pump in fluid-flow communication with the intake for drawing fluid from within the blancher and communicating it to one of the first and second manifolds;

b) introducing food product into a heat transfer medium within the housing ~~of the blancher~~ through the inlet;

c) withdrawing fluid from within the housing and delivering it to one of the first and second manifolds;

[[c)]] d) discharging [[a]] fluid through each one of the plurality of ~~pairs of~~ orifices of the first and second manifolds into the heat transfer medium;

[[d)]] e) heating the food product in the food product-receiving chamber via heat transfer from the heat transfer medium;

[[e)]] f) urging the food product in the food product-receiving chamber toward the outlet; and

[[f)]] g) removing the food product from the food product-receiving chamber through the outlet;

wherein in step [[c)]] d) the fluid ~~is a liquid~~ that is discharged through each one of the orifices of at least one of the manifolds comprises water ~~at a flow rate of at least 20 gallons per minute~~; and

wherein the first and second manifolds are spaced apart and have each one of the plurality of orifices of each manifold oriented to direct fluid discharged from each orifice into an exiting quadrant in the housing toward the food product-receiving chamber impinging against food product disposed in heat transfer medium in the exiting quadrant ~~each manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with its orifices directing flow of liquid heat transfer medium toward the food product receiving chamber and 2) located outwardly of a lengthwise extending centerline of the blancher in an exiting quadrant thereof defined from where the rotating food product transport mechanism emerges from the heat transfer medium to adjacent the centerline but not passing to or beyond the centerline; and~~

~~wherein there is at least eight inches of depth of food product in the food product receiving chamber~~.

52. **(Currently amended)** A method of heating a food product comprising:

a) providing a blancher including a perforate food product-receiving chamber disposed in a tank of a housing that has a food product inlet and a food product outlet, a rotary food product transport mechanism disposed in the food product receiving chamber for urging [[the]] food product inside the food product-receiving chamber toward the food product outlet, a first manifold having a plurality of pairs of orifices each for introducing a fluid into the tank and the

food product-receiving chamber ~~housing~~, and a second manifold having a plurality of pairs of orifices each for introducing a fluid into the tank and the food product-receiving chamber ~~housing~~;

b) introducing food product into [[a]] the food product-receiving chamber through the inlet and into a liquid heat transfer medium received in the tank and extending into the food product-receiving chamber ~~within the housing of the blancher through the inlet~~;

c) discharging a fluid through each one of the plurality of pairs of orifices into the heat transfer medium;

d) heating the food product in the food product-receiving chamber;

e) urging the food product in the food product-receiving chamber toward the outlet; and

f) removing the food product from the food product-receiving chamber through the outlet;

wherein in step c) the fluid is a liquid that is discharged through each one of the orifices of at least one of the manifolds at a flow rate of at least 20 gallons per minute per foot of manifold length;

wherein each manifold is 1) oriented in a lengthwise direction relative to the food product receiving chamber with its orifices directing flow of liquid heat transfer medium toward the food product receiving chamber and 2) located outwardly of a lengthwise-extending centerline of the blancher with each one of the orifices directing fluid flow into [[in]] an exiting quadrant thereof defined from where the rotating food product transport mechanism emerges from the heat transfer medium to adjacent the centerline but not passing to or beyond the centerline; and

wherein at least eight inches of food product depth is heated in step d) and at least eight thousand pounds of food product per hour is removed in step f).